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The monotypic Philippine genus *Gongrospermum* Radlk. (Sapindaceae)

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Abstract

The rare Philippine genus *Gongrospermum* Radlk., containing the single species *G. philippinense* Radlk., is described. The genus can easily be distinguished from similar looking genera like *Dimocarpus, Glenniea*, and *Trigonachras* on the basis of the absence of petals, the fruits which are glabrous inside, the absence of an arilloid and the ruminate endotesta.

Introduction

The genus *Gongrospermum* from Luzon, the Philippines, is one of those rare, unfamiliar genera of the Sapindaceae. Only two collections of this monotypic genus are known. The genus was established in 1914 by Radlkofer, the monographer of the Sapindaceae. Typical for the genus are the rusty brown indumentum, the flowers with a flat hairy disc and no petals, the obovoid capsular fruit which is hairy outside but glabrous inside, the seed without arilloid, and especially the ruminate endotesta.

The specimens show two types of flowers which both look hermaphrodite, but one is actually male (filaments relatively long, anthers opening, pistil small) and the other is female (filaments relatively short, anthers remaining closed, pistil large). One specimen contained female flowers and a separate inflorescence with male flowers, so probably the genus shows duodichogamy (a floral phenomenon with in the course of time a sequence of male, female, and hermaphrodite looking male flowers on the same inflorescences). This phenomenon renders the trees in effect dioecious. However, the trees may also be really dioecious as the male inflorescence part was not attached and may have belonged to a different tree.

Gongrospermum is one of the last genera to be revised for the treatment of the Sapindaceae for Flora Malesiana.

Systematic position of the genus

Gongrospermum with its capsular fruits, belongs to the tribe *Cupanieae*. The tribes *Nephelieae* (containing important SE Asian fruit trees) and *Schleichereae* are thought to be closely related, while the *Paullineae* and the *Thauinieae* are perhaps derived from the *Cupanieae* (Muller & Leenhouts, 1976).

A few genera look quite similar to *Gongrospermum* : *Dimocarpus, Glenniea, Trigonachras*

N. B. the term *arilloid* is the general term for any fleshy structure around a seed; *arillodes* are the fleshy outgrowths of the hilar region of the seed.

Dimocarpus (tribe *Nephelieae*) possesses stellately bundled hairs which are absent in *Gongrospermum*. Moreover, *Dimocarpus* has indehiscent fruits and seeds with an arillode (the fruits of *Gongrospermum* are dehiscent and the seeds have no arilloid at all).

Glenniea (tribe *Lepisanthae* also has indehiscent fruits, like *Dimocarpus*, but these are of a completely different type, more or less drupaceous. Another difference with *Gongrospermum* is the presence of petals and a varying number of stamens (*Gongrospermum* always has 8 stamens).

Trigonachras (tribe *Cupanieae*) was thought to be closely related to *Gongrospermum* by Radlkofer (1914, 1933). However, the two genera differ in quite a few characters. *Trigonachras* has very thick-walled fruits which are pilose inside (thinner walled and glabrous inside in *Gongrospermum*). Other differences are the presence of petals and the absence of a ruminate endotesta in *Trigonachras*.

Gongrospermum was, due to lack of knowledge, omitted from the key to the genera of the Malesian Sapindaceae based on vegetative and fruit characters (Van Welzen, 1988). It can easily be inserted:

Lead 26b should refer to couplet 30A.

Couplet 30 A will read:

30 A a. Fruit indehiscent, not capsular 30

b. Fruit dehiscent, capsular. Philippines..... **Gongrospermum philippinense**

The remainder of this article contains a description of the genus and its single species.

Gongrospermum

Gongrospermum Radlk., Philipp. J. Sc. Bot. 8: 469. 1914; Merr., Enum. Philipp. 2: 512. 1923; Radlk. in Engl., Pflanzenr. 98: 1255. 1933. Type species : *Gongrospermum philippinense* Radlk.

Indumentum rusty-brown sericeous to tomentose, hairs simple. *Leaves* paripinnate; petiole relatively long, up to half of length of rhachis: petiole and petiolules pulvinate. *Leaflets* (sub) opposite, not punctate, lower surface papillate, domatia absent; venation raised on both surfaces. veins densely reticulate. *Inflorescences* axillary thyrses, branching along rhachis, the latter pilose when young; cymules agglomerate, basally dichasial, apically cincinnate. *Bracts* and *bracteoles* triangular, completely tomentose. *Flowers* apparently hermaphrodite, but male and female flowers discernable. *Calyx* a cupule with 5 equal lobes, completely tomentose. *Petals* absent. *Disc* subcupular, flat, complete, 5-lobed, tomentose. *Stamens* 8; filament especially in lower half tomentose; anther basifixed in cleft latrorsely lengthwise opening in male flowers. *Pistil*: ovary pyramidal, tomentose, 3 - locular, ovule one per locule, axillary, ascending, apotropous, campylotropous; style pyramidal, apically slightly opening and recurving showing inside stigmas. *Fruit* capsular, dehiscent, not lobed, not stiped, densely shortly pilose outside; mesocarp especially basally somewhat thicker, corky, inside glabrous. *Seed* without arilloid, endotesta thick, ruminately grown together with embryo. *Embryo* notorrhizal, immature.

Gongrospermum philippinense Radlk., Philipp. J. Sc. Bot. 8: 471. 1914;

Merr., Enum. Philip. 2: 512. 1923; Radlk. in Engl., Pflanzenr. 98: 1255. 1933. Type : *BS McGregor 12358* (M, holo; iso in US), Philippines, Luzon Laguna Prov., Calauan, Nov.-Dec. 1910.

Tree? *Branches* grooved, smooth, flowering ones 4-7 mm thick. Leaves 2- or 3- jugate; rhachis 10-17 cm long; petiole 7.5 - 8.5 cm long; petiolules up to 9 mm long. *Leaflets* ovate, 9-20 by 5-9 cm, ± asymmetric except for the base; latter attenuate, asymmetric; margin entire, flat, apex acuminate, tip emarginate to rounded; upper and lower surface smooth; (sub) glabrous, nerves 8 - 12 per side, marginally indistinctly looped. *Inflorescences*: rhachis 12.5-30 cm long, branches up to 15 cm long; cymules up to 5 - flowered. *Bracts c.* 0.7 × 0.7 mm; bracteoles 0.2-0.3 × 0 2-0.3 mm. *Flowers* 2-3 mm in diam., pedicel 1-1.8 mm long. *Calyx* basally connate, lobes triangular, 0.8-1.2 × 0.6-1.2 mm. *Stamens*: filament in male flowers, up to 1.5 mm long, in female, flowers up to 1 mm long; anther glabrous, in male flowers *c.* 0.7 × 0.5 mm in female flowers *c.* 0.5 × 0.5 mm. *Pistil*: ovary up to 0.8 mm high in male flowers, up to 2.2 mm in female flowers; style indistinct in male flowers up to 0.8 mm high in female flowers. *Fruit* obovoid, rounded in cross - section, *c.* 1.4 cm high × 1.2 cm wide, brown, outside and inside smooth. *Seed* obovoid, sharply triangular in cross - section, *c.* 8 × 5 mm; hilum round, *c.* 2 mm in diam. *Embryo* immature.

Distribution : Philippines, endemic on Luzon.

Ecology: Found in forests. Flowering at least in May and Nov.-Dec. Fruiting at least in Nov.-Dec.

Specimens examined :

Philippines, Luzon, *BS McGregor 12358,* Laguhma Prov., Calauan; *Fenix 28236,* Apayao Subprov.

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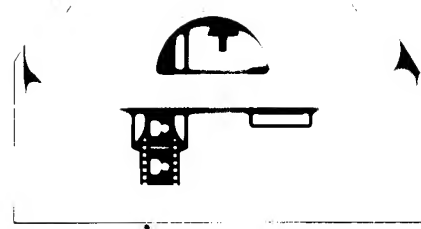
Acknowledgements

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